

# SU9920

# SONIC ULTRAMIZER

## User Manual

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Version 1.0 April 2007



[www.behringer.com](http://www.behringer.com)



# SONIC ULTRAMIZER SU9920

## IMPORTANT SAFETY INSTRUCTIONS



### CAUTION:

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

### WARNING:

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Place the power cord so that it is protected from being walked on and sharp edges. Be sure that the power cord is protected particularly at plugs, convenience receptacles and the point where it exits from the apparatus.
- 11) The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
- 12) Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
- 13) Only use attachments/accessories specified by the manufacturer.

- 14) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 15) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 16) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 17) Caution! - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.



# SONIC ULTRAMIZER

## Ultimate Stereo Sound Enhancement Processor

- ▲ Dramatically improves your sound by adding clarity, dimension and depth
- ▲ Produces natural brightness through harmonic enhancement and tighter bass with increased punch through phase compensation
- ▲ Professional and home recording studios: brings out the full sound spectrum of your tracks, mixdown and mastering
- ▲ PA, nightclub and DJ systems: improves the performance of any sound system by adding sparkling high end and super-tight bass without the need for additional speakers or amps
- ▲ Churches and worship houses: dramatically increases voice intelligibility and your music gains presence
- ▲ Guitar, bass and keyboard rack: improves articulation and restores cutting power often lost in miking and amplification
- ▲ Broadcasting and webcasting: adds loudness and "live presence" even on small car or computer speakers
- ▲ 5.1 and hi-fi setups: DVDs become stunningly lifelike and the spatial dimension of your sound system increases dramatically
- ▲ Dedicated Low contour and Process controls per channel for ultimate sound enhancement
- ▲ Accurate 5-segment LED level meters for optimum performance
- ▲ Servo-balanced inputs and outputs with ¼" TRS and gold-plated XLR connectors
- ▲ High-quality components and exceptionally rugged construction ensure long life
- ▲ Conceived and designed by BEHRINGER Germany

## FOREWORD



Dear Customer,

Welcome to the team of SONIC ULTRAMIZER users, and thank you very much for expressing your confidence in us by purchasing this device.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present an outstanding Psychoacoustic Processor, whose neutral sound makes

them ideal for studio use. The task of designing our new SU9920 certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together. What a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes, enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass this benefit on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the SU9920 possible. From the developers to the many other employees at this company, each has made a personal contribution to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

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## 1. INTRODUCTION






Thank you for purchasing the SONIC ULTRAMIZER SU9920. The SU9920 is a professional signal processor used to improve the presence and liveliness of audio signals. For signal processing a combination of a dynamic filter and a phase delay algorithm is used. The latter is based on psychoacoustic principles and guarantees improved sound characteristics without unnatural side effects. The unit works with two independent channels, so you can selectively process stereo or two mono signals separately from each other. Whether you purchased the SU9920 for your studio, live sound or the stage, the unit's sound qualities are so impressive that you'll never again want to do without this sound enhancer when mixing.

We at BEHRINGER hope you enjoy your new acquisition.

### 1.1 Before you get started




#### 1.1.1 Shipment

Your product was carefully packed at the factory to ensure safe transport. Nevertheless, if the box is damaged inspect the unit immediately for signs of damage.

-  **If the unit is damaged please do NOT return it to us, but notify your dealer and the shipping company immediately; otherwise, claims for damage or replacement may not be granted.**
-  **We recommend that you use a flight case to give the unit optimum protection during use or transport.**
-  **Always use the original box to prevent damage during storage or transport.**
-  **Make sure that children cannot play unsupervised with the unit or its packaging.**
-  **Please ensure proper disposal of all packing materials.**

#### 1.1.2 Initial operation

Ensure adequate air supply and to avoid overheating do not place the unit near radiators etc.

-  **Blown fuses must be replaced by fuses of the correct rating! Please refer to the "SPECIFICATIONS" section for the applicable rating.**
- For connection to the mains use the enclosed power cord with cold connector which complies with the relevant safety regulations.
-  **Please make sure that all devices are properly grounded. For your own safety, never remove or disable the ground conductors from the devices or on the power cords. The unit must always be connected to the mains outlet with a protective grounding connection.**
  -  **The tone quality may diminish within the range of powerful radio broadcasting stations and high-frequency sources. Increase the distance between the transmitter and the unit, and use shielded cables for all connections.**

#### 1.1.3 Online Registration

Please register your new BEHRINGER equipment right after your purchase by visiting <http://www.behringer.com> and read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, it is our intention to have it repaired as quickly as possible. To arrange for warranty service, please contact the BEHRINGER retailer from whom the equipment was purchased.

Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information).

Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (<http://www.behringer.com>). Registering your purchase and equipment with us helps us process your repair claims more quickly and efficiently.

Thank you for your cooperation!

## 2. CONTROL ELEMENTS AND CONNECTIONS

### 2.1 Front panel

The control elements for CHANNEL 1 and CHANNEL 2 are identical. In the following paragraphs the functions are described using CHANNEL 1 as an example.

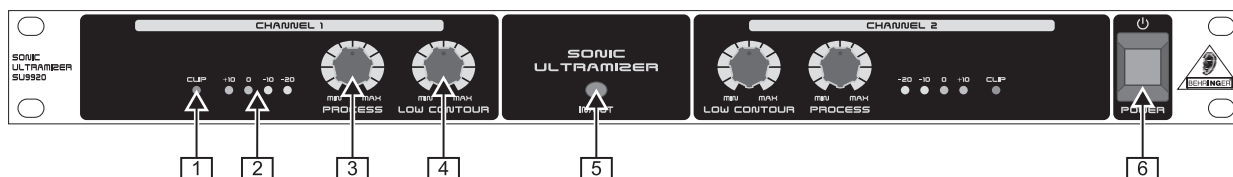


Figure 2.1: Control elements on the front panel

- 1 CLIP:** This LED is constantly lit when the input level is too high. If it lights up for a short period of time it is warning you of an impending overdrive. There is a safety headroom of 3dBu before the signal becomes distorted. The LED should not light up.
- 2 LEDs:** The four LEDs display the output level in 10dBu steps. Regular illumination of the 0dBu LED indicates an optimal output level.
- 3 PROCESS:** With this control the portion of high-frequency signals to be processed by the SU9920 is specified. The MAX setting corresponds to a level boost of +12dBu at 5kHz.
- 4 LOW CONTOUR:** This control adjusts the portion of low-frequency signals to be processed by the SU9920. The MAX setting corresponds to a level boost of +12dBu at 50kHz.
- 5 IN/OUT:** With this switch signal processing is activated and deactivated. The LED lights up in the active operating mode.
- 6 POWER:** Use the POWER switch to put the unit into operation. The POWER switch should be in the "Off" position when you connect the unit to the power feed (mains).

To disconnect the unit from the mains, pull out the power plug. When switching on the unit ensure that the power plug is easily accessible. To mount the unit in a rack ensure that the unit can easily be disconnected from the mains by means of a plug or an all-pole mains switch on the back side.

**Please note:** Switching the POWER switch off does not disconnect the unit completely from the mains. For this reason you should unplug the power cord if the unit is not going to be used for prolonged periods of time.

### 2.2 Rear panel

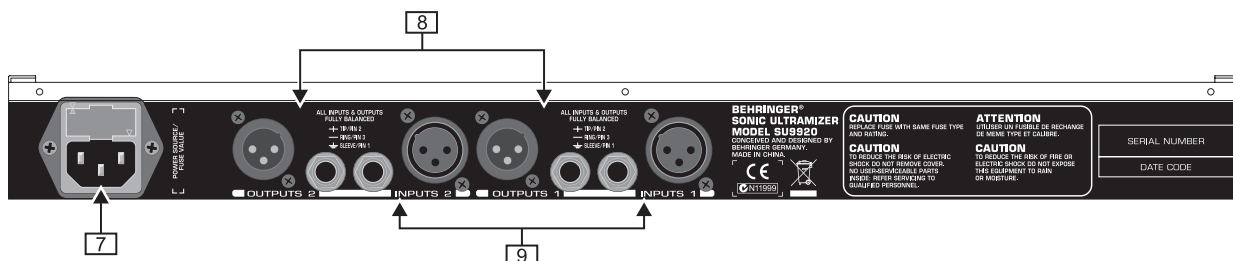


Figure 2.2: Control elements on the rear panel

- 7 FUSE HOLDER / IEC POWER SOCKET:** The mains connection is made via an IEC male socket. It complies with relevant safety regulations. A suitable power cord is included. Replace the fuse with a fuse of the same type.
- 8 OUTPUTS 1:** Balanced XLR sockets and 1/4 inch jacks - these are used to connect amplifiers as well as further signal processors and recording devices. The jacks and XLR sockets can be used in parallel when two outputs are required.
- 9 INPUTS 1:** Balanced XLR sockets and 1/4 inch jacks - these are used to connect line-level signal sources (e.g. a mixing console). To avoid interference only the jacks or the XLR sockets should be used.

**SERIAL NUMBER:** The serial number can be found on the back right side of the unit. It is needed for online registration.

### 3. PRACTICAL APPLICATION

The SU9920 belongs to the group of psychoacoustic enhancers which also includes exciters. These devices can enhance the quality of audio signals.

In contrast to an exciter, the SONIC ULTRAMIZER does not add any new harmonics to the signal, but rather improves the signal quality by processing the harmonics in the original material. Through this action the sound is changed more naturally than it is through harmonic enhancement with an exciter.

The concept behind the SONIC ULTRAMIZER is based on the fact that through signal modification (as is caused for example, by equalizers and frequency filters), the original signal is distorted. Through this the time-based sequence of the fundamental tone and the harmonics, whose correlation is extremely important for naturally sounding signal reproduction via loudspeakers, is shifted. Restoring the original time-based relationships between the fundamental tone and the harmonics thus ideally leads to optimal reproduction of the original signal and hence a sound which is free from unpleasant distortion.

With the SU9920 you can reproduce the original relationships between the fundamental tone and the harmonics and additionally boost the high and low-frequency portions independently of each other. Through this the transparency of the starting signal is greatly increased and a precise reproduction of all signals over the entire frequency spectrum is obtained.

#### 3.1 Application examples

Similarly to a compressor or a graphic equalizer, the SU9920 is integrated into the signal path, i.e. connected in series to mix outputs or integrated into the insert path of a mixing console. Avoid parallel use in the Aux path, as with an effects unit, since this mixes the original signal with the processed effect signal, thereby considerably worsening the sound characteristics.

The best way to use the SONIC ULTRAMIZER is in a signal chain, e.g. from keyboard to SU9920 to amplifier, as the following application examples show.

##### 3.1.1 Live sound

The SU9920 is ideally suited to use with live sound systems in clubs, discos, live concerts and public performances. Here the unit not only can considerably improve the signal quality, but also can compensate for the inadequacies of small or weak PA systems.

For this application the unit should be installed between the mixing console mix output and the amplifier input. If a graphic equalizer is also used, it should be positioned after the SU9920.

Because this application involves stereo processing, channels 1 and 2 must have the same settings. Otherwise, the original stereo image will be distorted.

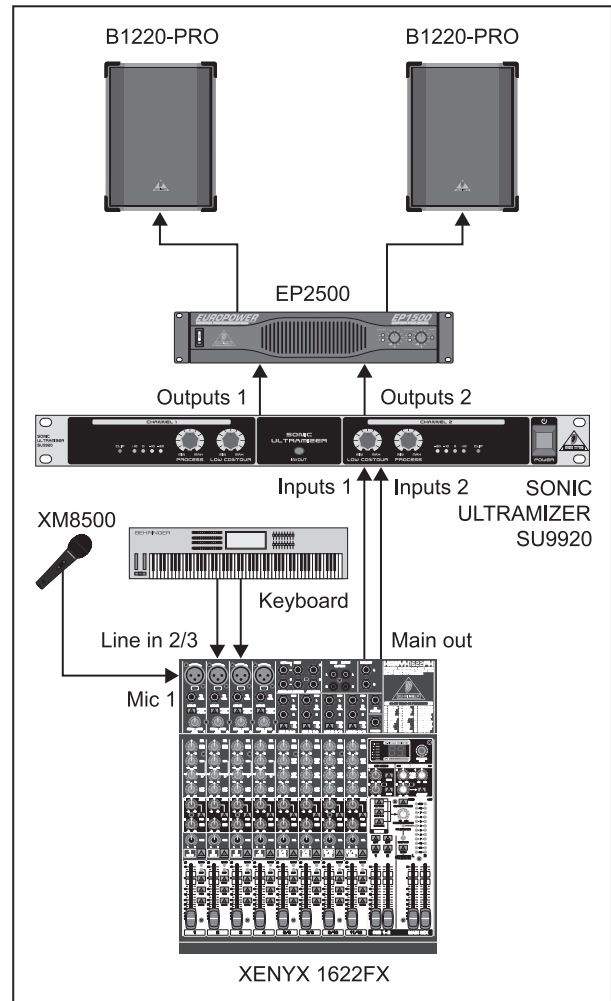


Figure 3.1: Use of the SU9920 with live sound systems

##### 3.1.2 Studio application

In a studio environment the SONIC ULTRAMIZER is ideal for mastering to enhance the sound of recordings. The SU9920 can lend your music the professional polish of high-quality productions in just a few steps. Even if you primarily work with a digital audio workstation, you can perform the final mastering with the SU9920 and an external recorder.

For this application connect the SU9920 so that it comes before the mastering recorder. Channels 1 and 2 must have the same settings since this application involves stereo processing. Otherwise, the original stereo image will be distorted.



# SONIC ULTRAMIZER SU9920

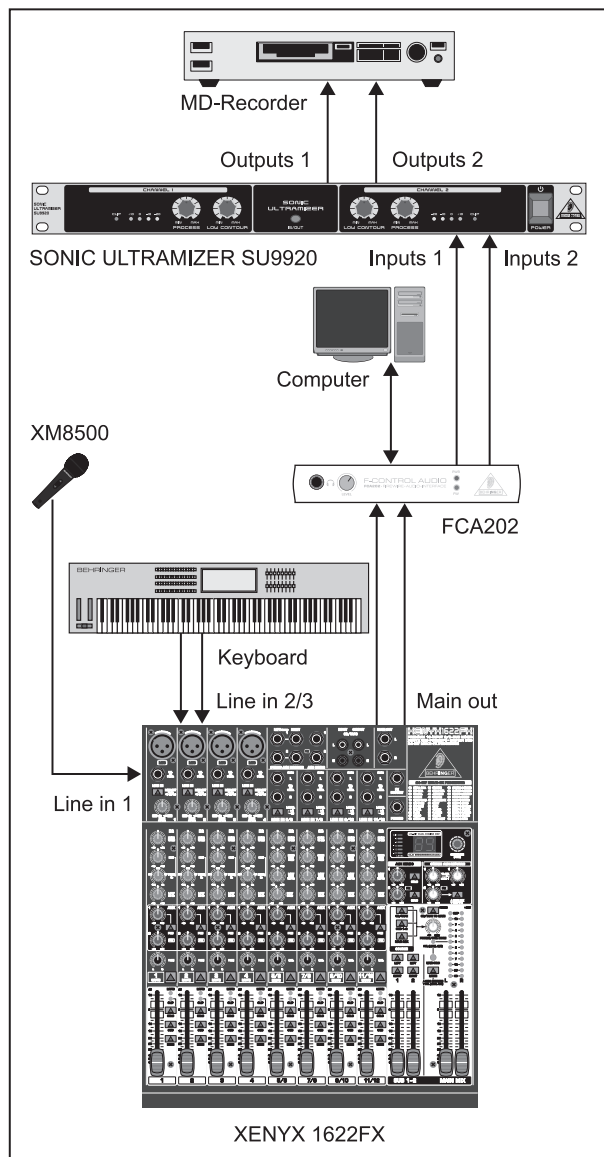


Figure 3.2: The SU9920 in Studio mode

## 3.1.3 Stage operation with instrument amplifiers

Besides being ideal for use with stereo signals, the SONIC ULTRAMIZER is also suitable for use with one or two individual signals, e.g. guitars. With electric guitars it can be used in combination with a combo amp or a separate modelling processor-amplifier combination to give the guitar sound more presence, fullness and punch. A similar combination with a keyboard and an external amplifier is possible. Because the two channels of the SU9920 work independently, even two different mono signals can be processed.

Connect the SU9920 with the effects loop connections on your combo amplifier if it provides for connection in insert mode, i.e. exclusively reproduces the output signal of the SU9920 via the loudspeaker.

If you are using a modelling processor you must connect the processor output to the SU9920 input and route the SU9920 signal to the amplifier.

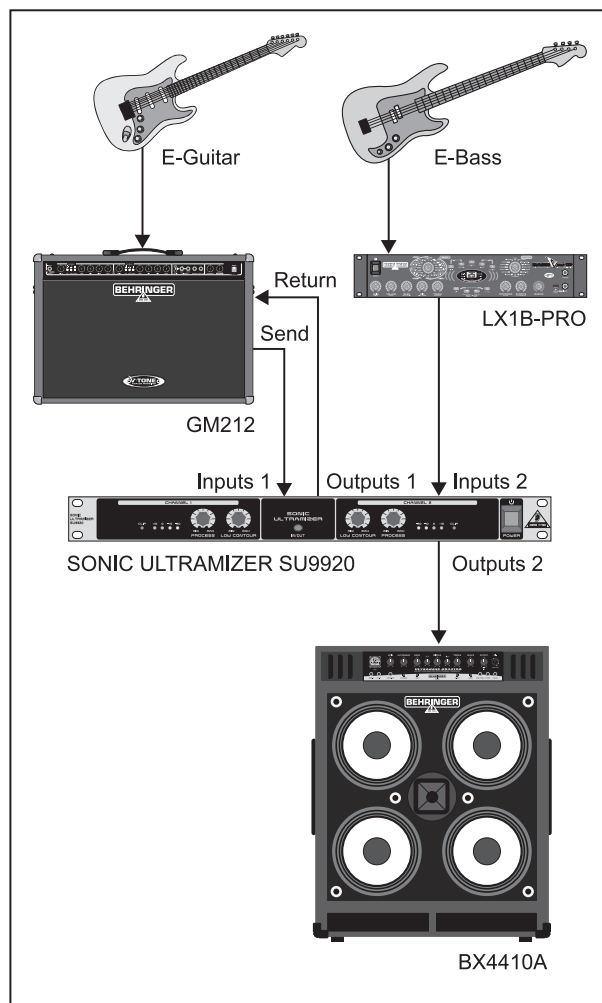


Figure 3.3: The SU9920 in use with guitar amplifiers

## 3.2 Basic operation

Due to the small number of control elements on the SU9920 it is easy to learn to use it. Perform the following steps:

- 1) Connect the unit according to the application as described in section 3.1.
- 2) Switch on all devices (amplifier and loudspeaker last) and ensure that the IN/OUT switch [5] on the SU9920 is illuminated, i.e. that the unit is working and all controls are set to 'MIN'.

**First make the following settings for one channel (channel 1 or 2) according to the input assignment. For stereo applications choose the same settings for the second channel as those made for the first channel.**

- 3) Set the signal level on the device feeding the SONIC ULTRAMIZER such that the CLIP LED [1] on the SU9920 either does not light up at all or for a short period of time only.
- 4) Turn the PROCESS control [3] until the desired enhancement effect in the high-frequency range is achieved or the 0dBu LED in the level display [2] lights up continuously.
- 5) Turn the LOW CONTOUR control [4] until the desired enhancement effect in the low-frequency range is achieved or the 0dBu LED in the level display [2] lights up continuously.
- 6) To compare the original and processed signals, repeatedly press the IN/OUT button.
- 7) Repeat steps 4) to 6) until you are satisfied with the result.



## 4. INSTALLATION

### 4.1 Rack mounting

The BEHRINGER SONIC ULTRAMIZER SU9920 requires 1U for installation in a 19-inch rack. Please make sure that you leave around 10cm for the rear connections. For installation of the unit in a rack please use M6 machine screws and nuts.

### 4.2 Audio connections

There are various ways to integrate the SU9920 into your setup. Depending on the application you will need different connecting cables, and these will be discussed in the following section.

#### 4.2.1 Cabling with jack cables

To operate the SU9920 in series with other equipment, you will need standard commercial 1/4" jack cables, often referred to as instrument cables or patch cables.

These cables have a 1/4" TS jack plug at each end. Connect the inputs of the equipment with the corresponding outputs of each of the other devices.

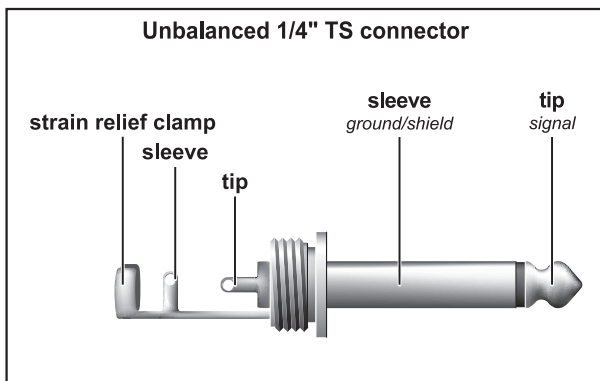


Fig. 4.1: Unbalanced 1/4" TS jack plugs

If your other equipment has balanced inputs, use a balanced switched cable with two stereo jack plugs at the balanced outputs of the SU9920. These cables provide a high level of security against interference signals such as noise interference from power cables, and they should be used for all long cable routes.

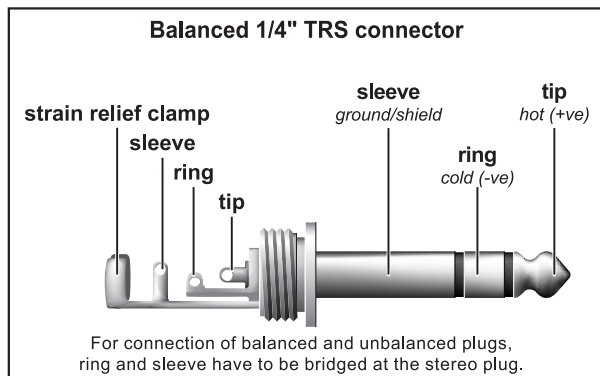


Fig. 4.2: Balanced 1/4" TRS jack plugs

Alternatively, you can use professional XLR cables with an XLR socket on one side and an XLR plug on the other side. This cable connection is the most reliable both electrically and mechanically.

### Balanced use with XLR connectors

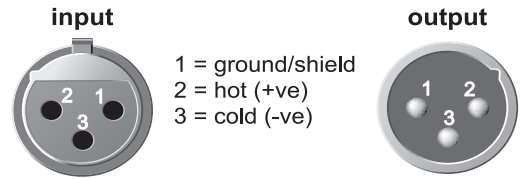


Figure 4.3: Balanced XLR plug

#### 4.2.2 Connection with insert cables

Please use standard insert cables equipped with 1/4" connectors to connect the SONIC ULTRAMIZER to the insert path of a mixing console. These Y cables have two 1/4" TS connectors at one end, and one 1/4" TRS connector at the other. Connect the plug marked "Send" to the INPUT L jack on the effects unit. Connect the "Return" plug to the OUTPUT L jack on the device. Connect the TRS connector to the insert jack of the channel strip on the mixing console. Use two insert cables for stereo sub-groups and main-mix inserts. The second cable must be connected to the INPUT/OUTPUT R jacks of the SU9920.

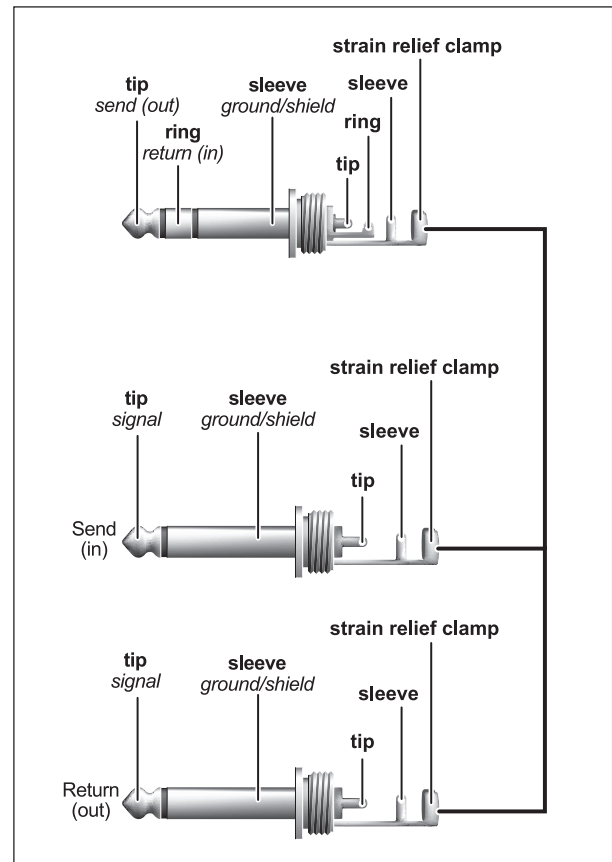


Fig. 4.4: Insert cable with one 1/4" TRS (tip-ring-sleeve) jack plug on one end and two 1/4" TS (tip-sleeve) jack plugs on the other end.

5. SPECIFICATIONS

INPUTS

Connections	XLR sockets and 1/4" stereo jacks
Type	Balanced
Input impedance	20 kΩ balanced, 10 kΩ unbalanced
Nominal input level	+4 dBu
Maximum input level	+22 dBu

OUTPUTS

Connections	XLR sockets and 1/4" stereo jacks
Type	Servo-balanced
Output impedance	60 Ω balanced, 60 Ω unbalanced
Maximum output level	+22 dBu

ENHANCER SECTION

Type	3-band phase delay and dynamic filter
PROCESS control	max. 12 dBu @ 5 kHz
LOW CONTOUR control	max. 12 dBu @ 50 kHz

SYSTEM DATA

Frequency response	25 Hz to 50 kHz, +/-3 dB
Signal-to-noise ratio	>95 dB, unweighted, 20 Hz to 20 kHz
Distortion (THD + N)	0.05% typ. @ +4 dBu, 1 kHz (IN/OUT)
Crosstalk	>75 dB

POWER SUPPLY

Mains voltage

USA/Canada	120 VAC, 60 Hz
China/Korea	220 VAC, 50/60 Hz
Europe/UK/Australia	230 VAC, 50 Hz
Japan	100 VAC, 50-60 Hz
Export model	120/230 VAC, 50-60 Hz

Power consumption	approx. 12 W
Fuse	100-120 VAC: T 250 mA, H 250 V 220-240 VAC: T 125 mA, H 250 V

DIMENSIONS/WEIGHT

Dimensions (H x W x D)	approx. 1,75" x 19" x 8,54" approx. 44.5 x 482.6 x 217 mm
Weight	approx. 4.85 lbs approx. 2.2 kg

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.

## 6. WARRANTY

### § 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.
2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

### § 2 ONLINE REGISTRATION

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting [www.BEHRINGER.com](http://www.BEHRINGER.com) (alternatively [www.BEHRINGER.de](http://www.BEHRINGER.de)) and kindly read the terms and conditions of our warranty carefully.

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

### § 3 WARRANTY

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year\* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.
2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.
3. Warranty claims other than those indicated above are expressly excluded.

### § 4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.
2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number. The return shipment address will be indicated by BEHRINGER.
3. Shipments without freight prepaid will not be accepted.

### § 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.
2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.
3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.
4. Damage/defects caused by the following conditions are not covered by this warranty:
  - ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
  - ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
  - ▲ damage/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.
5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.
6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.
7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit. Costs for freight and packing will be invoiced separately C.O.D. When the buyer has sent in a written repair order such costs will also be invoiced separately.

### § 6 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

### § 7 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

\* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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Technical specifications and appearance are subject to change without notice. The information contained herein is correct at the time of printing. BEHRINGER accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph or statement contained herein. Colors and specifications may vary slightly from product. Products are sold through our authorized dealers only. Distributors and dealers are not agents of BEHRINGER and have absolutely no authority to bind BEHRINGER by any express or implied undertaking or representation. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of BEHRINGER International GmbH.

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Tel. +49 2154 9206 0, Fax +49 2154 9206 4903

**FEDERAL COMMUNICATIONS COMMISSION**  
**COMPLIANCE INFORMATION**



Responsible party name: **BEHRINGER USA, Inc.**  
Address: **18912 North Creek Parkway, Suite 200  
Bothell, WA 98011, USA**  
Phone/Fax No.: **Phone: +1 425 672 0816,  
Fax: +1 425 673 7647**

hereby declares that the product

complies with the FCC rules as mentioned in the following paragraph:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ▲ Reorient or relocate the receiving antenna.
- ▲ Increase the separation between the equipment and receiver.
- ▲ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▲ Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Important information:**

Changes or modifications to the equipment not expressly approved by BEHRINGER USA can void the user's authority to use the equipment.